

Aircrete anchor FPX-I

The strong internally threaded anchor with unique 4-way expansion for fixings in aerated concrete.

4



Air conditioning units



Rail fixing

Applications

- Suspended ceilings
- Cable trays
- Pipelines
- Ventilation ducts
- Guard rails/hand rails
- TV consoles
- Kitchen cupboards
- Stand-off installations

Advantages

- The FPX-I enables easy tightening via the hexagon wrench using a cordless screwdriver or ratchet and therefore offers top installation comfort.
- The deformation-controlled expansion of the anchor with the hexagon wrench ensures safe, even and gentle installation.
- The unique 4-way expansion of the FPX-I with a square expansion sleeve prevents the rotation of the anchor in the drill hole

and ensures high tension and shear loads, which means fewer fixing points. The releasing of the hexagonal wrench guarantees an automatic setting control for each installation process. The first steel anchor with an ETA-Approval and fire protection certificate for fixings in aerated concrete enables use for safety-relevant fixings, too.

Certificates / Features



ETA-12/0456, in autoclaved aerated concrete



M8 - M12

Building materials

Approved for:

- Aerated concrete with compressive strength 2 to 7 N/mm²
- Aerated concrete wall or ceiling boards with compressive strength 3.3 to 4.4 N/mm²
- Planked aerated concrete masonry, e.g. plastered, tiled, papered etc.

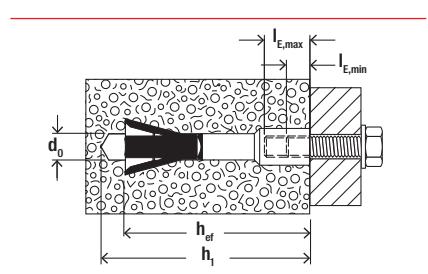
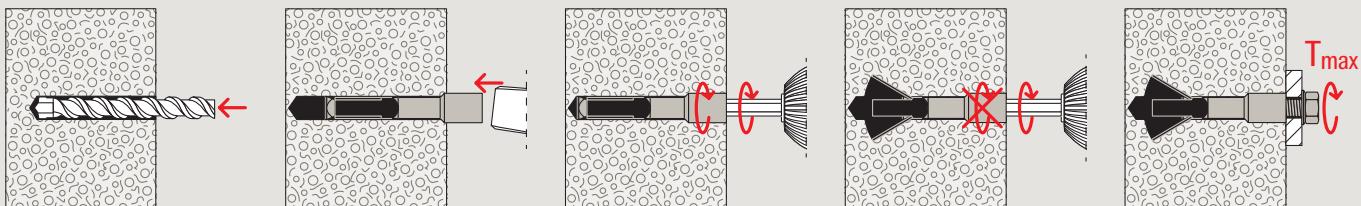
Versions

- Galvanised steel

Functioning

- The FPX-I with internal thread is suitable for pre-positioned installation.
- Pre-drilling enables easy hammering in, even in high-strength aerated concrete. There is no need to clean the drill hole.
- When the anchor is tightened with the hexagon wrench, the internal thread sleeve starts to rotate and the cone is pulled into the square expansion sleeve. The aerated concrete is compressed on the four sides and generates an undercut in the drill hole.
- When reached the optimum expansion, the hexagon wrench is released automatically from the anchor.

Installation FPX-I



Technical data

Aircrte anchor FPX-I



FPX-I

Item	Item no.	Ap-pro-val ETA	Drill diameter d_0 [mm]	Min. drill hole depth for pre-posi-tioned installation h_1 [mm]	Anchor length l [mm]	Min. effect. ancho-rage depth h_{ef} [mm]	Min. bolt penetra-tion $l_{E,min}$ [mm]	Max. bolt penetra-tion $l_{E,max}$ [mm]	Sales unit [pcs]
FPX M6-I	519021	●	10	95	75	70	10	15	25
FPX M8-I	519022	●	10	95	75	70	8	15	25
FPX M10-I	519023	●	10	95	75	70	10	15	25
FPX M12-I	519024	●	10	95	75	70	12	15	25

Technical data

Setting tool FPX-I



Setting tool FPX M6 I Setting tool FPX M8-M12 I

Item	Item no.	Matching anchor type	Sales unit [pcs]
Setting tool FPX M6 I	522517	FPX M6-I	10
Setting tool FPX M8-M12 I	522518	FPX M8-I - FPX M12-I	10

Aircrete anchor FPX-I

Permissible loads¹⁾ and

For the design the complete current assessment ETA-12/0456 has to be considered.

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Type	FPX-I M6, M8, M10, M12		
Effective anchorage depth	h_{ef}	[mm]	70
Permissible load ²⁾ (F_{perm}) per anchor in cracked AAC-slabs			
$f_{\text{AAC}} \geq 3,3 \text{ N/mm}^2 / \rho_m \geq 0,50 \text{ kg/dm}^3$	F_{perm}	[kN]	0.62
$f_{\text{AAC}} \geq 4,4 \text{ N/mm}^2 / \rho_m \geq 0,55 \text{ kg/dm}^3$	F_{perm}	[kN]	0.83
Permissible load ²⁾ (F_{perm}) per anchor in uncracked AAC-slabs			
$f_{\text{AAC}} \geq 3,3 \text{ N/mm}^2 / \rho_m \geq 0,50 \text{ kg/dm}^3$	F_{perm}	[kN]	0.83
$f_{\text{AAC}} \geq 4,4 \text{ N/mm}^2 / \rho_m \geq 0,55 \text{ kg/dm}^3$	F_{perm}	[kN]	1.24
Component dimensions			
Minimum member thickness with drill hole cleaning	h_{min}	[mm]	100
Minimum member thickness without drill hole cleaning	h_{min}	[mm]	120
Single anchor			
Minimum spacing	a	[mm]	600
Minimum edge distance	c_1	[mm]	125 / 150 ³⁾
Minimum edge distance orthogonal to c_1	c_2	[mm]	190
Anchor groups ⁴⁾ with 2 or 4 anchors			
Actions		shear and oblique tension	only axial tension
Minimum spacing between anchor group and 2 single anchors	s_{min}	[mm]	100
Minimum edge distance	c_1	[mm]	250
Minimum spacing	a	[mm]	750
Minimum edge distance orthogonal to c_1	c_2	[mm]	375

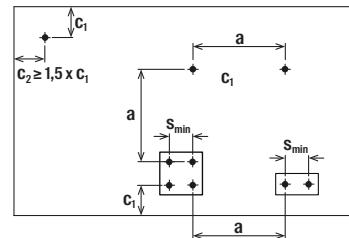
¹⁾ Permissible loads of a single anchor for all load directions. The required partial safety factors for material resistance as well as a partial safety factor for load actions of $\gamma_L = 1.4$ are considered.

2) Grade of the screw resp. threaded rod ≥ 4.8 .

3) In case of reinforced plates with a width ≤ 70

4) $E_u = 2 \times E_c$ valid in case of anchor g.

$F_{perm,group} = Z \times F_{perm,single\ anchor}$ Valid in case of anchor groups with 2 or 4 anchors. Accurate data see ETA.



Loads

Aircrete anchor FPX-I

Permissible loads¹⁾ and required component dimensions in aerated concrete masonry. For the design the complete current assessment ETA-12/0456 has to be considered.

Type			FPX-I M6, M8, M10, M12
Effective anchorage depth	h_{ef}	[mm]	70
Permissible load ²⁾ (F_{perm}) per anchor			
$f_{\text{AAC}} \geq 1,6 \text{ N/mm}^2 / \rho_m \geq 0,25 \text{ kg/dm}^3$	F_{perm}	[kN]	0.32
$f_{\text{AAC}} \geq 2,0 \text{ N/mm}^2 / \rho_m \geq 0,35 \text{ kg/dm}^3$	F_{perm}	[kN]	0.43
$f_{\text{AAC}} \geq 4,0 \text{ N/mm}^2 / \rho_m \geq 0,50 \text{ kg/dm}^3$	F_{perm}	[kN]	0.89
$f_{\text{AAC}} \geq 6,0 \text{ N/mm}^2 / \rho_m \geq 0,65 \text{ kg/dm}^3$	F_{perm}	[kN]	1.43
Component dimensions			
Minimum member thickness with drill hole cleaning	h_{min}	[mm]	100
Minimum member thickness without drill hole cleaning	h_{min}	[mm]	120
Single anchor			
Minimum spacing	a	[mm]	375
Minimum edge distance	c_1	[mm]	125
Minimum distance to joints	$c_2^{3)}$	[mm]	75 ⁴⁾ / 125
Minimum edge distance orthogonal to c_1	c_2	[mm]	190
Anchor groups ⁵⁾ with 2 or 4 anchors			
Actions		shear and oblique tension	only axial tension
Minimum spacing between anchor group and 2 single anchors	s_{min}	[mm]	100
Minimum edge distance	c_1	[mm]	250
Minimum spacing	a	[mm]	750
Minimum edge distance orthogonal to c_1	c_2	[mm]	375

¹⁾ Permissible loads of a single anchor for all load directions. The required partial safety factors for material resistance as well as a partial safety factor for load actions of $\gamma_L = 1.4$ are considered.

²⁾ Grade of the screw resp. threaded rod ≥ 4.8 .

³⁾ In case of non visible joints F_{perm} has to be divided in halve. Accurate data see ETA.

⁴⁾ c_F for tensile load and/or shear load parallel to the joint which is not filled with mortar with width $\leq 2 \text{ mm}$.

⁵⁾ $F_{\text{perm,group}} = 2 \times F_{\text{perm,single anchor}}$ valid in case of anchor groups with 2 or 4 anchors. Accurate data see ETA.

